



## Voice controlled automatic hand sanitizer dispenser with thermometer

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### Abstract

Recent days, the whole world is struggling with COVID-19 pandemic. As one of the preventive measures, people's body temperatures are measured and hands are sanitized while they enter into most of the organizations. Usually this is manually performed by security personals. Since nowadays we have to fight with Omicron which is the new variant of COVID-19 and highly transmissible, it is better to perform the temperature screening and sanitizing by reducing or without human-human interaction.

This is the main motivation and scope of this project. Many automatic hand sanitizing devices are available at the market at present, but the novelty of this project is voice enabling feature with low cost. The system welcomes the person and instructs him to measure his body temperature by voice while he is entering. Then it measures the body temperature and displays as well as reads out the measured temperature. If the person's body temperature is within the allowable range, then it will dispense the hand sanitizer, else it will instruct him to go for manual screening. The circuit for the system comprises an Arduino microcontroller, OLED display, relay module, ultrasonic sensors, temperature sensor, 5 V DC pump, LED lights, audio modulator and speaker. The temperature sensor (MLX90614) senses the body temperature. Microcontroller verifies that the value is within the specified range as controlled by its ultrasonic sensor and displays the temperature on the OLED display and voice play also. Thereafter, the relay module controls the 5 V DC pump to dispense the sanitizer. The language of the voice can be set according to the user's preference.

The device helps to maintain personal preventive measures as well as detecting a possible symptomatic person, since fever with high temperature is one of the major symptoms of COVID-19. The device has been tested and ensured its working effectiveness. It will be very useful for any organization even with more buildings/sections. It can be positioned at the entrance of the buildings for temperature screening and hand sanitize all the staff and visitors against COVID-19.

**Keywords:** COVID-19; Pandemic; Microcontroller